

February 12th.

Dr. MORTON, President, in the Chair.

Dr. Leidy read the following, being a report by Prof. Haldeman, Chairman of the Committee on Entomology, on the progress of that science during the past year.

*Report on the Progress of Entomology in the United States during the year 1849.*

By S. S. HALDEMAN.

Whilst the progress of Entomology during the year 1849 has been sufficiently encouraging, it cannot be doubted that it would advance more rapidly if there were one or more general works upon the subject, adapted to this country. The student is now retarded either by the extent of the subject, or because he cannot consult standard collections, works, or figures of American genera and species; whilst such as have passed through the preliminary difficulties, generally prefer original research to the preparation of works which partake in some degree of the nature of compilations; and on account of the expense of figures, authors usually limit them to their own discoveries.

Another cause which retards the natural sciences in general, in a country where the amount of material to be investigated is extensive, is the want of instruction in them in our educational institutions, in but few of which their claims to a place among the sciences are acknowledged. Such causes tend to limit the number of observers, and must be taken into consideration in estimating the condition of certain sciences in this country.

1. J. L. LeCONTE M.D. *Synopsis of the Coleopterous Insects of the group Cleridae* which inhabit the United States. 28 pages 8vo. Annals of the Lyceum of N. Y. This synopsis, besides a full synonymy, contains the characters of ten new species. Many of the American species are figured in a very neat and beautiful style in Spinola's *Essai monographique sur les Clerites*, the last work of this active entomologist.

2. Dr. LeConte has also produced a *Catalogue of Coleoptera*, including diagnoses of a considerable number of new species, collected in a journey to Lake Superior with Prof. Agassiz and his companions. On the point of publication.

3. ——— On the Pselaphidae of the United States. *Bost. J. nat. hist.* 1849. vol. 6. p. 64—110.

4. ——— General Remarks on the Coleoptera of Lake Superior. In *Agassiz Excursion*. P. 201—242. 8vo.

5. S. S. HALDEMAN. *Cryptocephalarum Boreali-americanae diagnoses*, etc. *J. Acad. nat. sci.* 1,215. 20 pages 4to. The synonymy and full descriptions of the species known to the author are given. Short diagnoses of the 24 new species are given in the *Proceed. Acad.* for April, 1849; 4,170.

6. ——— *New Hymenoptera of the genera Ampulex, Sigalphus, Chelonus, and Dorylus*. *Pr. Acad.* 4,203.

7. ——— On the larva of *Physocoelus inflatus* Dej. (*Helops contractus* Mels. 1846. *Pr. Ac.* 3,61. *H. contractus* Beauv. *H. striatus* Oliv.?) Read before the

Am. Assoc., of the proceedings of which various reports were made. This larva is much like that of *Tenebrio*, but the mandibles differ somewhat, and the anal segment is truncated in a slope, the surface of the truncation being cupshaped.

8. ——— *History of Phalangopsis*, a genus of Orthoptera, with three new species, two of which form a subgenus. Am. Assoc.

9. M. A. MORRIS who has carefully studied the genus *Cecidomyia*, has announced a new species (Pr. Acad. 4,194) named *C. culmicola*, from its habit of living within the stem of the grain.

10. J. W. DAWSON Esq. of Pictou, Nova scotia, has announced the appearance of the European *Cecidomyia tritici* in that province. Pr. Acad. 4,210.

11. T. S. SAVAGE M.D. has given some valuable details (Pr. Acad. 4,194) relative to the economy of the *driver ants* of Africa, hitherto regarded as a distinct genus under the name of *Anomma*; but the observations of Dr. S. show that they are neuters of the genus *Dorylus*.

12. ——— The same observer furnishes a full account of the habits of *Termes fatalis*, extending to ten closely printed pages. Pr. Acad. 4,211.

13. JOS. LEIDY M.D. has an anatomical paper on the odoriferous glands in the Invertebrata, illustrated with a plate. Pr. Acad. 4,234.

14. ——— The same author has a paper on Entophyta, and new Entozoa, in the Articulata. id.

15. Prof. L. AGASSIZ announced at the last meeting of the American Association that the respiratory tracheae of insects terminate in an enlargement or sac which may be considered minute lungs. The circulatory or fluid-bearing tracheae terminate in minute threads.

16. ASA FITCH M.D. The second Annual Report of the Regents of the university of N. Y. on the condition of the State cabinet of Natural history (Albany, 1849) contains a catalogue by Dr Fitch, of about 350 species of insects, mostly Coleoptera, intended to form the nucleus of a collection in a department which had been previously neglected in forming the cabinet, and preparing the zoology of the State.

17. During the year, *Economic entomology* has been enriched by the discovery by Miss Morris, of a new destroyer of the peach tree, which proves to be the *Tomicus liminaris* of Say. It wounds the bark by boring through it and feeding upon the living portion. I have found another bark borer (*Hylesinus aculeatus* Say) feeding upon the inner living bark of the white ash, *Fraxinus acuminata*. Miss Morris has communicated to me a curculionid, the *Baris tripunctatus* of Say, which a friend of hers discovered to be one of the destroyers of the potato, in the stem of which the larva bores passages and undergoes its transformations.

The CRUSTACEA have been enriched during the past year by the elaborate and valuable papers of Prof. Dana.

18. J. D. DANA. *Synopsis of the family Gammaracea*. Am. J. Sci. 8,135—140 (and 428) including characters of the families, subfamilies and genera. Five new genera are given.

19. ——— *Conspectus Crustaceorum quae in Orbis Terrarum Circumnavigatione, Carolo Wilkes e Classe Reipublicae Foederatae Duce, lexit et descripsit Jacobus D. Dana*. Proceed. Am. Acad. Boston 1,150—154, and 2,9—61. Am. J. Sci. 8,276—285. This paper contains a revision of the generic characters of

the *Entomostraca*, and includes 18 new genera and the names of 183 new species, to be published in the volumes of the Exploring expedition. The continuation, *Am. J. Sci.* 8,424—428, is devoted to the *Isopoda* and contains five new genera and characters of eleven new species.

20. L. R. GIBBES. Tuomey's Report on the Geology of South Carolina, Columbia, 1848 (distributed in 1849) contains a "Catalogue of the Fauna of South Carolina" in which there is an excellent catalogue of the *Crustacea* by Prof. Gibbes of Charleston.

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A paper was read from Mr. Conrad, describing new species of fresh water shells from Arkansas and from Australia, and referred to a committee, consisting of Mr. Phillips, Dr. Wilson and Dr. Griffith.

Dr. Leidy offered the following remarks:

Dr. Leidy stated it was now eighteen months since he had sought for Entophyta within living animals, having been previously impressed with the belief of their existence upon reflecting upon the essential conditions of life. Four months since he exhibited to the Academy numerous drawings, and specimens of entophyta obtained from living animals; he now exhibited others.

The essential conditions of Life are five in number, viz., a germ, nutritive matter, air, water, and heat. The four latter undoubtedly exist in the interior of living animals, animal or entozoa germs also are well known to exist, and it was rendered extremely probable that vegetable germs would also exist, and with them all the conditions necessary to vegetable growth. Plants have been very frequently observed growing upon the exterior of animals and less frequently upon the interior, most usually upon diseased surfaces, but the growth of such parasites had not been pointed out as a normal and common condition as in the case of entozoa.

Dr. L. next reviewed the theory of generation. He inclines to the opinion that sexual elements are absolutely necessary for the perpetuation of germs. He considers the alternation of generation in certain animals no objection to the law, for after successive developments an admixture of the sexual elements is observed to be necessary. The reproduction among Cryptogamia may probably often exhibit phenomena analogous to the alternation of generation of animals, but universally he thinks it will be discovered that a true sexual admixture takes place in every species of these plants at some period of their life. According to the observations of Schimper it is necessary among the mosses. From an observation made by Klencke, upon a fungus which grew upon a diseased surface, Dr. L. thinks that sexual admixture would be discovered to take place in the *mycelium*. In numerous instances it had been observed among the Algæ. He stated he thought he had noticed the process in *Achyla prolifera*, and gave a description of the phenomena. He finally considers that science is on the eve of demonstrating the existence of a law "that an admixture of sexual elements is necessary for the perpetuation of specific life germs."

He then exhibited numerous elaborate drawings of new entophyta observed growing in the ventriculus of *Passalus cornutus*, a remarkable one growing in a honey-like liquid in the proventriculus of the larva of *Arctia Isabella*, another

from *Acheta abbreviata*, etc. He remarked that when such plants were found in animals they were usually very abundant.

Dr. L. then stated that very slight modifications in the five essential conditions of life were sufficient to produce the vast variety of living beings upon the globe. As an instance, he mentioned he had lying upon his table a saucer with a cork bottom, in which lay a partly dissected *Passalus cornutus* half immersed in water. Two days afterwards he noticed upon the part of the insect above the water a quantity of *Mucor mucedo?* growing, and from the part within the water numerous fine, stiff filaments, which upon examination proved to be *Achyla prolifera*; upon the cork around the insect grew a third genus, consisting of fine cottony filaments, which were articulated, of which he exhibited a drawing; and upon the insect at the surface of the water, but not within the latter, grew a fourth genus, of which he also exhibited a drawing.

He also stated he had had the good fortune of observing in a single morning all the stages of development of *Achyla prolifera* growing from some individuals of *Ascarides* which had been lying in a dish of water for a few days.

In reply to some remarks made by members, Dr. Leidy said he could not admit the doctrine of spontaneous generation, but rather thought modifications in the essential conditions of life favorable to the development of different, and always pre-existing germs derived from a parent.

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*February 19th.*

Dr. MORTON, President, in the Chair.

A letter was read from Mr. J. T. Becker, dated Paris, 10th December, 1849, proposing exchanges with the Academy in Entomology. Referred to the Committee on Entomology.

Also a letter from H. Lecog, dated Clermon-ferrand, January 10, 1850, proposing exchanges in Conchology with the Academy, or with individual members of the Society. Referred to the Committee on Conchology.

Dr. Leidy offered the following observations:

Dr. Leidy presented to the examination of the Society a colored and several other drawings of what he termed an entophytic forest, taken from a portion of the mucous membrane of the ventriculus of *Passalus cornutus*. He remarked that at least six species of entophyta were found growing upon the mucous membrane of the ventriculus of *P. cornutus*, which were often present in great quantity, frequently some thousands, and which from their number, polymorphous appearance of several species, and attachment to various appendages of the mucous membrane, resembled very strikingly a miniature Brazilian forest, which was heightened in some degree by the existence of a nematoid worm, which recalled to mind the idea of one of the serpents of such a forest.

A somewhat similar drawing he exhibited, taken from the small intestine of *Julus marginatus*.

Other drawings were also presented. Dr. L. stated that among his collection of living Julides, he had a number of times observed individuals to become dull